What is claimed is:

1. An actuator configured to actuate a valve having a valve with a valve stem, the actuator assembly comprising:

a motor configured to drive the valve stem in a first direction;

biasing means for driving the valve stem a second direction that is opposite to the first direction; and

brake means for reducing a speed at which the valve stem moves in the second direction.

2. An actuator according to claim 1 wherein the biasing means includes one or more springs.

3. An actuator according to claim 1 wherein the brake means includes a governor that uses friction to reduce the speed at which the valve stem moves in the second direction.

4. An actuator according to claim 1 wherein the brake means includes a governor that uses magnetic forces to reduce the speed at which the valve stem moves in the second direction.

5. An actuator according to claim 1 wherein the brake means includes a transmission that changes a gearing ratio of the actuator assembly depending on the

direction of movement, the change in gearing ratio reducing the speed at which the valve stem moves in the second direction.

6. An actuator according to claim 1 wherein the brake means includes a controller that applies an electrical signal to the motor while the motor is otherwise un-powered and the biasing means is driving the valve stem in the second direction.

7. An actuator according to claim 6 wherein the controller sequentially applies two or more electrical pulses to the motor.

8. An actuator according to claim 1 wherein the brake is only activated after the speed at which the valve stem moves in the second direction exceeds a threshold value.

9. An actuator assembly configured for securement to a valve having a valve with a valve stem, the actuator assembly comprising:

a gear assembly configured to engage the valve stem;

a motor configured to drive the gear assembly in a first direction; and

biasing structure configured to drive the gear assembly in a second direction;

wherein the motor comprises brake means for reducing or limiting rotational velocity of the motor when the biasing structure is driving the gear assembly in the second direction.

10. The actuator assembly of claim 9, wherein driving the gear assembly in the first direction opens the valve.

11. The actuator assembly of claim 9, wherein driving the gear assembly in the second direction closes the valve.

12. The actuator assembly of claim 9, wherein driving the gear assembly in the first direction closes the valve.

13. The actuator assembly of claim 9, wherein driving the gear assembly in the second direction opens the valve.

14. The actuator assembly of claim 9, wherein the biasing structure comprises one or more springs.

15. The actuator assembly of claim 9, wherein the motor comprises a motor housing.

16. The actuator assembly of claim 15, wherein the brake means comprises a flexible material that moves outwardly under centrifugal force to frictionally engage the motor housing when the motor rotates at a speed greater than a predetermined threshold.

17. The actuator assembly of claim 15, wherein the motor comprises a radially centered shaft that rotates with the motor, and the brake means is secured to the radially centered shaft.

18. The actuator assembly of claim 17, wherein the brake means comprises a straight portion having a first end, a second end and a center therebetween, a first curved arm extending from the first end and a second curved arm extending from the second end, and wherein the center of the straight portion is secured to the radially centered shaft.

19. The actuator assembly of claim 18, wherein the first curved arm comprises a first thickened portion at an end opposite the straight portion and the second curved arm comprises a second thickened portion at an end opposite the straight portion.

20. The actuator assembly of claim 19, wherein the first thickened portion and the second thickened portion are configured to frictionally engage the motor housing under a predetermined amount of centrifugal force.

21. A valve assembly, comprising:

a valve having a first position and a second position;

an actuator assembly disposed proximate the valve, the actuator assembly configured to move the valve between the first position and the second position;

wherein the actuator assembly comprises damping means configured to limit a speed of the valve when the actuator assembly is moving the valve from the first position

to the second position, but not significantly limit the speed when the actuator assembly is moving the valve from the second position to the first position.

22. The valve assembly of claim 21, wherein the valve assembly is configured to be plumbed within a heated water system.

23. The valve assembly of claim 21, wherein the valve assembly is configured to be plumbed within a chilled water system.

24. The valve assembly of claim 21, wherein the valve assembly is configured to be plumbed within an irrigation system.

25. The valve assembly of claim 21, wherein the valve assembly is configured to be plumbed within a potable water system.

26. The valve assembly of claim 22, wherein the actuator assembly is configured to move the valve between the first position and the second position in response to a command signal from a thermostat.

27. A valve assembly, comprising:

a valve having an open position and a closed position;

a valve stem operatively attached to the valve;

a gear assembly configured to engage the valve stem;

a motor configured to drive the gear assembly to the open position; and

one or more springs configured to drive the gear assembly to the closed position;

wherein the motor comprises damping means for limiting rotational velocity of the motor when the one or more springs are driving the gear assembly to the closed position.

28. The valve assembly of claim 27, wherein the damping means is configured to limit the rotational velocity of the motor only after the rotational velocity of the motor exceeds a predetermined threshold.

29. A method of reducing water hammer caused by operation of a valve, the method comprising the steps of:

driving the valve to a first position at a first speed using a first force;

driving the valve to a second position at a second speed using a second force; and

reducing the second speed by providing a force that counters the second force.

30. A method according to claim 29 wherein the first position corresponds to an open position of the valve, and the second position corresponds to a closed position of the valve.

31. A method of reducing water hammer in a previously installed valve assembly that includes a valve and an actuator assembly, the actuator assembly including

a first motor and a return mechanism configured to act against the first motor; the method comprising steps of:

removing the actuator assembly; and

installing a replacement actuator assembly that includes a second motor that includes brake means configured to slow a return speed of the second motor.

32. A method of reducing water hammer in a previously installed valve assembly that includes a valve and an actuator assembly, the actuator assembly including a housing, a first motor and a return mechanism configured to act against the first motor; the method comprising steps of:

removing at least a portion of the actuator assembly housing;

removing the first motor;

installing a second motor that includes brake means configured to slow a return speed of the second motor; and

replacing the at least a portion of the actuator assembly housing.